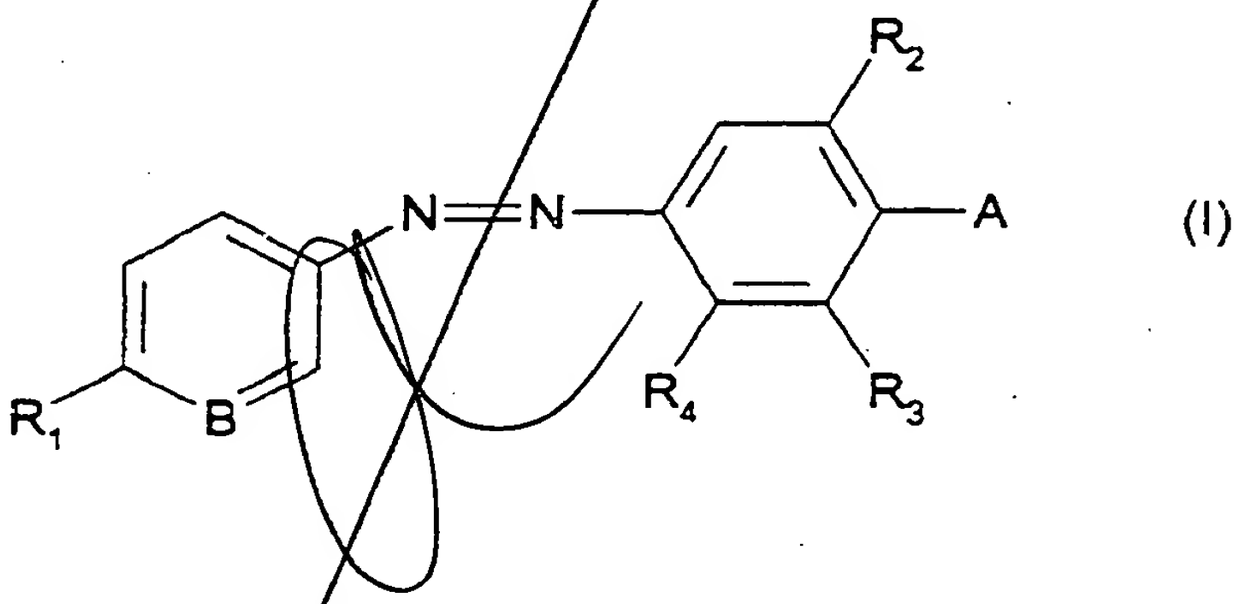
CLAIMS

1. Composition for the oxidation dyeing of keratin fibres, and in particular of human keratin fibres such as the hair, characterized in that it comprises, in a medium which is suitable for dyeing:

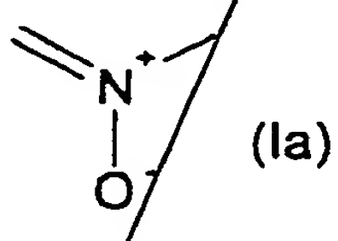
- at least one oxidation base,
- as direct dye, at least one 3-aminopyridine derivative chosen from the compounds of formula (I) below:



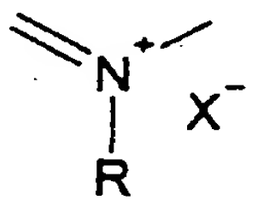
(I)

in which:

- B represents a group of formula (Ia) or (Ib) below:



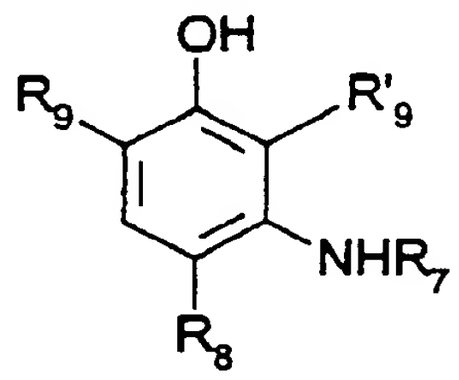
(Ia)



(Ib)

- R represents a C_1-C_4 alkyl radical;
- R_1 represents a hydrogen or halogen atom such as chlorine, bromine or fluorine, or a C_1-C_4 alkyl or C_1-C_4 alkoxy radical;
- R_2 represents a hydrogen atom or a C_1-C_4 alkyl or C_1-C_4 alkoxy radical;

- R_4 represents a hydrogen or halogen atom such as chlorine, bromine or fluorine, or a C_1-C_4 alkyl, nitro, amino or (C_1-C_4)acylamino radical;
- R_3 represents a hydrogen atom or else R_4 and R_3 together form a 6-membered unsaturated ring bearing a hydroxyl substituent chelated with one of the nitrogen atoms of the azo double bond;
- A represents a residue $-NR_5R_6$ in which R_5 represents a hydrogen atom or a C_1-C_4 alkyl, C_1-C_4 monohydroxyalkyl or C_2-C_4 polyhydroxyalkyl radical; R_6 represents a hydrogen atom, a C_1-C_4 alkyl, C_1-C_4 monohydroxyalkyl or C_2-C_4 polyhydroxyalkyl radical, a phenyl ring or a $-CH_2-SO_3Na$ radical;
- X^- represents a monovalent or divalent anion and is preferably chosen from a halogen atom such as chlorine, bromine, fluorine or iodine, a hydroxide, a hydrogen sulphate or a (C_1-C_6)alkyl sulphate such as, for example, a methyl sulphate or an ethyl sulphate, and
- at least one coupler chosen from the meta-aminophenol derivatives of formula (II) below, and the addition salts thereof with an acid:



(II)

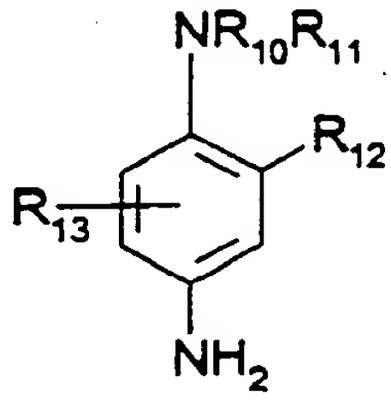
in which:

- R_7 represents a hydrogen atom or a C_1-C_4 alkyl, C_1-C_4 monohydroxyalkyl, C_2-C_4 polyhydroxyalkyl or C_1-C_4 monoaminoalkyl radical;
- R_8 represents a hydrogen atom, a C_1-C_4 alkyl or C_1-C_4 alkoxy radical or a halogen atom chosen from chlorine, bromine and fluorine,
- R_9 and R'_9, which may be identical or different, represent a hydrogen or halogen atom or a C_1-C_4 alkyl, C_1-C_4 alkoxy, C_1-C_4 monohydroxyalkyl, C_2-C_4 polyhydroxyalkyl, C_1-C_4 monohydroxyalkoxy or C_2-C_4 polyhydroxyalkoxy radical;

it being understood that at least one of the radicals R_7, R_8, R_9 and R'_9 is other than a hydrogen atom.

2. Composition according to Claim 1, characterized in that the oxidation base(s) is (are) chosen from para-phenylenediamines, double bases, para-aminophenols, ortho-aminophenols and heterocyclic oxidation bases.

3. Composition according to Claim 2, characterized in that the para-phenylenediamines are chosen from the compounds of formula (III) below, and the addition salts thereof with an acid:



(III)

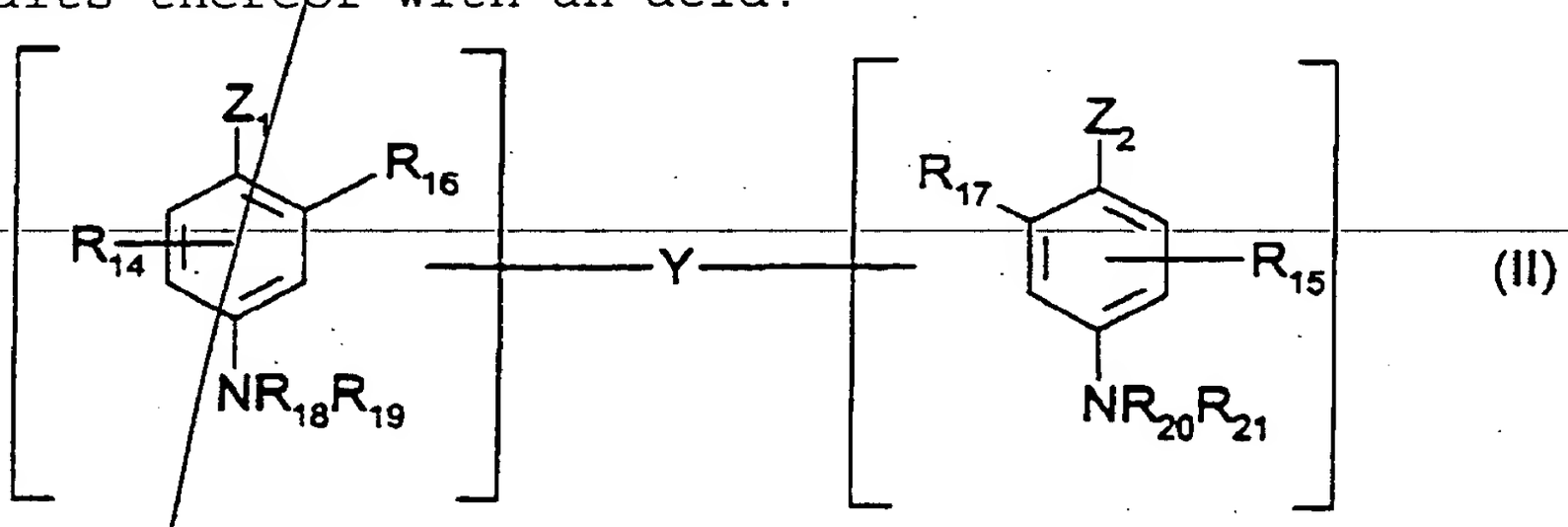
in which:

- R_{10} represents a hydrogen atom or a C_1-C_4 alkyl radical, C_1-C_4 monohydroxyalkyl radical, C_2-C_4 polyhydroxyalkyl radical, (C_1-C_4)alkoxy(C_1-C_4)alkyl radical, C_1-C_4 alkyl radical substituted with a nitrogenous group, phenyl or 4'-aminophenyl;
- R_{11} represents a hydrogen atom or a C_1-C_4 alkyl radical, C_1-C_4 monohydroxyalkyl radical, C_2-C_4 polyhydroxyalkyl radical, (C_1-C_4)alkoxy(C_1-C_4)alkyl radical or C_1-C_4 alkyl radical substituted with a nitrogenous group;
- R_{12} represents a hydrogen atom, a halogen atom such as a chlorine, bromine, iodine or fluorine atom, or a C_1-C_4 alkyl radical, C_1-C_4 monohydroxyalkyl radical, C_1-C_4 hydroxyalkoxy radical, acetylamino(C_1-C_4)alkoxy, mesylamino(C_1-C_4)alkoxy or carbamoylamino(C_1-C_4)alkoxy radical,
- R_{13} represents a hydrogen or halogen atom or a C_1-C_4 alkyl radical.

4. Composition according to Claim 3, characterized in that the para-phenylenediamines of formula (III) are chosen from para-phenylenediamine, para-tolylenediamine, 2-chloro-para-phenylenediamine, 2,3-dimethyl-para-phenylenediamine, 2,6-dimethyl-para-phenylenediamine, 2,6-diethyl-para-phenylenediamine, 2,5-dimethyl-para-phenylenediamine, N,N-dimethyl-para-phenylenediamine, N,N-diethyl-para-phenylenediamine, N,N-dipropyl-para-phenylenediamine, 4-amino-N,N-diethyl-3-methylaniline, N,N-bis(β-hydroxyethyl)-para-

phenylenediamine, 4-N,N-bis(β-hydroxyethyl)amino-2-methylaniline, 4-N,N-bis(β-hydroxyethyl)amino-2-chloroaniline, 2-β-hydroxyethyl-para-phenylenediamine, 2-fluoro-para-phenylenediamine, 2-isopropyl-para-phenylenediamine, N-(β-hydroxypropyl)-para-phenylenediamine, 2-hydroxymethyl-para-phenylenediamine, N,N-dimethyl-3-methyl-para-phenylenediamine, N-ethyl-N-(β-hydroxyethyl)-para-phenylenediamine, N-(β,γ-dihydroxypropyl)-para-phenylenediamine, N-(4'-aminophenyl)-para-phenylenediamine, N-phenyl-para-phenylenediamine, 2-β-hydroxyethyloxy-para-phenylenediamine, 2-β-acetylaminoethyloxy-para-phenylenediamine and N-(β-methoxyethyl)-para-phenylenediamine, and the addition salts thereof with an acid.

5. Composition according to Claim 2, characterized in that the double bases are chosen from the compounds of formula (IV) below, and the addition salts thereof with an acid:



(II)

in which:

- Z_1 and Z_2, which may be identical or different, represent a hydroxyl or $-NH_2$ radical which can be

substituted with a C_1-C_4 alkyl radical or with a linker arm Y;

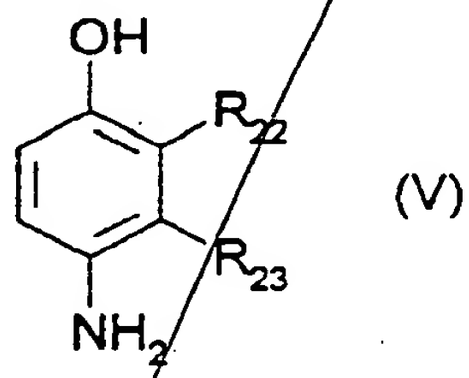
- the linker arm Y represents a linear or branched alkylene chain comprising from 1 to 14 carbon atoms, which can be interrupted or terminated with one or more nitrogenous groups and/or with one or more hetero atoms such as oxygen, sulphur or nitrogen atoms, and optionally substituted with one or more hydroxyl or C_1-C_6 alkoxy radicals;
- R_{14} and R_{15} represent a hydrogen or halogen atom, a C_1-C_4 alkyl radical, C_1-C_4 monohydroxyalkyl radical, C_2-C_4 polyhydroxyalkyl radical or C_1-C_4 aminoalkyl radical or a linker arm Y;
- R_{16}, R_{17}, R_{18}, R_{19}, R_{20} and R_{21}, which may be identical or different, represent a hydrogen atom, a linker arm Y or a C_1-C_4 alkyl radical;

it being understood that the compounds of formula (IV) comprise only one linker arm Y per molecule.

6. Composition according to Claim 5, characterized in that the double bases of formula (IV) are chosen from N,N'-bis(β-hydroxyethyl)-N,N'-bis(4'-aminophenyl)-1,3-diaminopropanol, N,N'-bis(β-hydroxyethyl)-N,N'-bis(4'-aminophenyl)ethylenediamine, N,N'-bis(4-aminophenyl)tetramethylenediamine, N,N'-bis(β-hydroxyethyl)-N,N'-bis(4-aminophenyl) tetramethylenediamine, N,N'-bis(4-methylaminophenyl)tetramethylenediamine, N,N'-bis(ethyl)-N,N'-bis(4'-amino-3'-

methylphenyl)ethylenediamine and 1,8-bis(2,5-diaminophenoxy)-3,5-dioxaoctane, and the addition salts thereof with an acid.

7. Composition according to Claim 2, characterized in that para-aminophenols are chosen from the compounds of formula (V) below, and the addition salts thereof with an acid:



(V)

in which:

- R_{22} represents a hydrogen or halogen atom or a C_1-C_4 alkyl, C_1-C_4 monohydroxyalkyl, (C_1-C_4)alkoxy(C_1-C_4)alkyl, C_1-C_4 aminoalkyl or hydroxy(C_1-C_4)alkylamino(C_1-C_4)alkyl radical,
- R_{23} represents a hydrogen or halogen atom or a C_1-C_4 alkyl, C_1-C_4 monohydroxyalkyl, C_2-C_4 polyhydroxyalkyl, C_1-C_4 aminoalkyl, cyano(C_1-C_4)alkyl or (C_1-C_4)alkoxy(C_1-C_4)alkyl radical,

it being understood that at least one of the radicals R_{22} and R_{23} represents a hydrogen atom.

8. Composition according to Claim 7, characterized in that the para-aminophenols of formula (V) are chosen from para-aminophenol, 4-amino-3-methylphenol, 4-amino-3-fluorophenol, 4-amino-3-hydroxymethylphenol, 4-amino-2-methylphenol, 4-amino-2-hydroxymethylphenol, 4-amino-2-methoxymethylphenol,

4-amino-2-aminomethylphenol, 4-amino-2-(β-hydroxyethylaminomethyl)phenol and 4-amino-2-fluorophenol, and the addition salts thereof with an acid.

9. Composition according to Claim 2, characterized in that the ortho-aminophenols are chosen from 2-aminophenol, 2-amino-5-methylphenol, 2-amino-6-methylphenol and 5-acetamido-2-aminophenol, and the addition salts thereof with an acid.

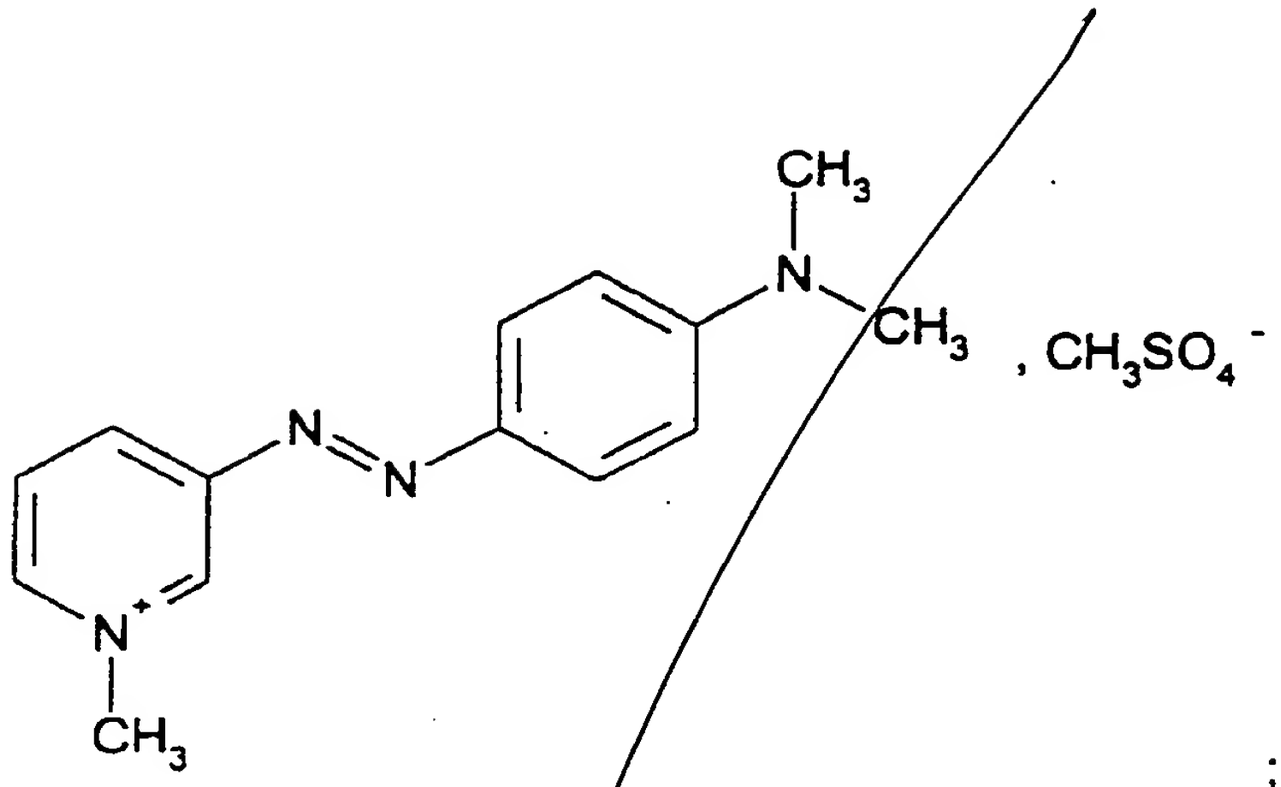
10. Composition according to Claim 2, characterized in that the heterocyclic oxidation bases are chosen from pyridine derivatives, pyrimidine derivatives and pyrazole derivatives, and the addition salts thereof with an acid.

11. Composition according to any one of the preceding claims, characterized in that the oxidation base(s) represent(s) from 0.0005 to 12% by weight relative to the total weight of the dye composition.

12. Composition according to Claim 11, characterized in that the oxidation base(s) represent(s) from 0.005 to 6% by weight relative to the total weight of the dye composition.

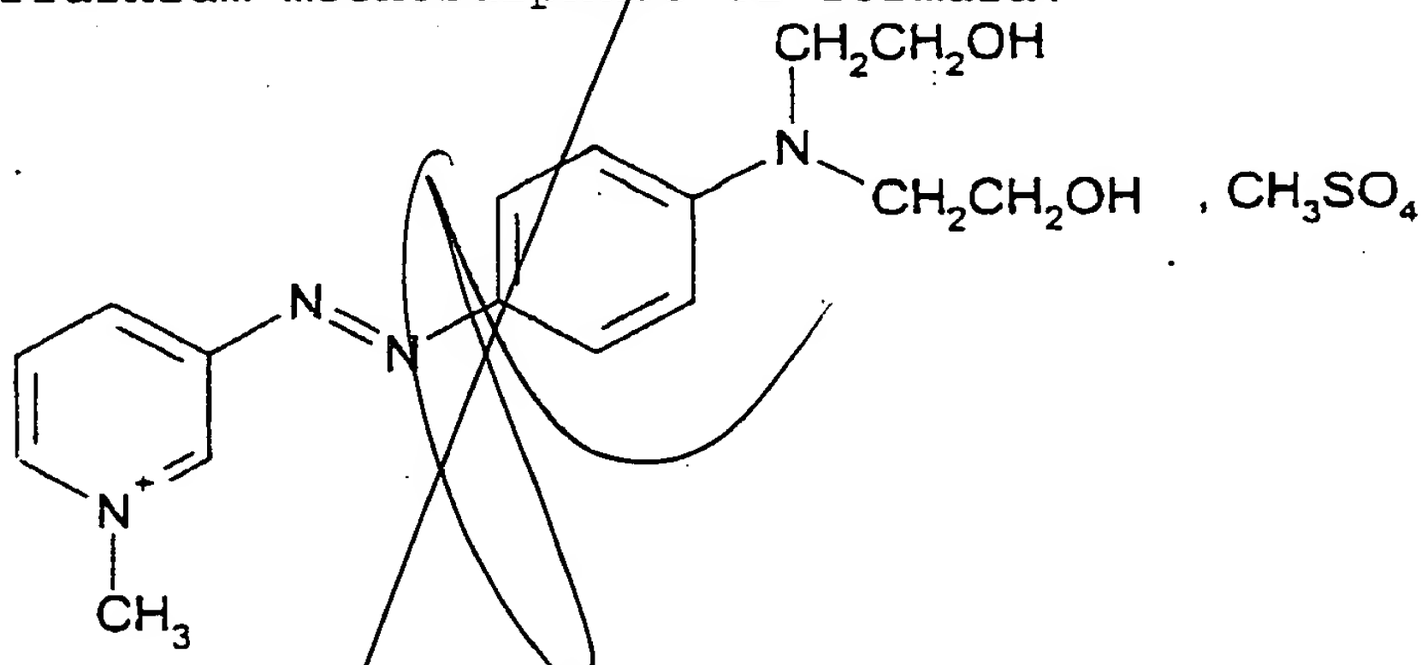
13. Composition according to any one of the preceding claims, characterized in that the 3-aminopyridine derivative(s) of formula (I) is (are) chosen from:

- 4'-dimethylaminobenzene-1'-azo-1-methyl-3-pyridinium methosulphate of formula:



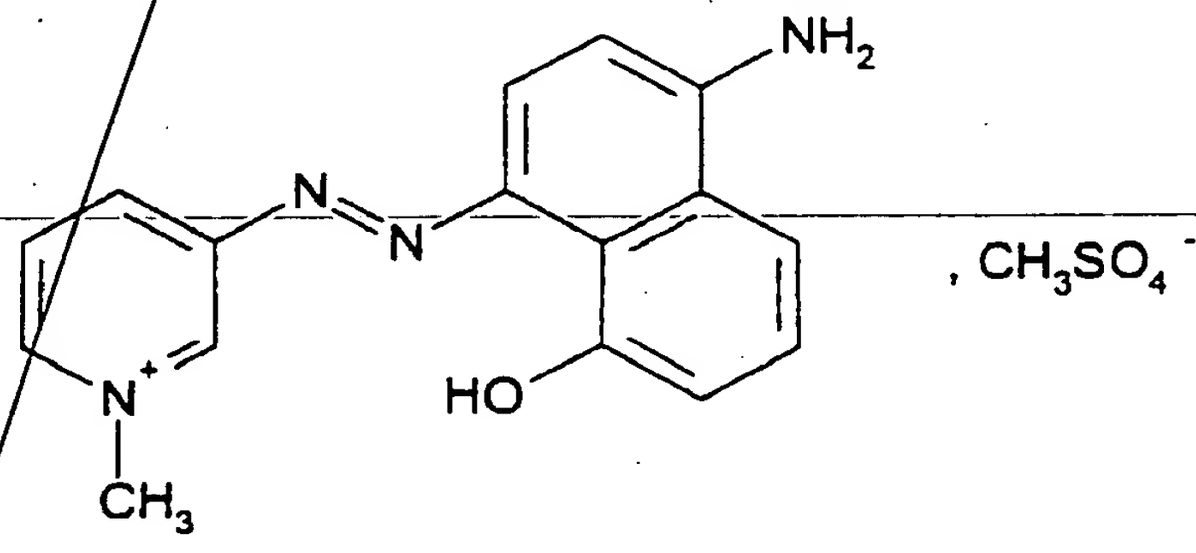
;

- 4'-bis(β-hydroxyethyl)aminobenzene-1'-azo-1-methyl-3-pyridinium methosulphate of formula:



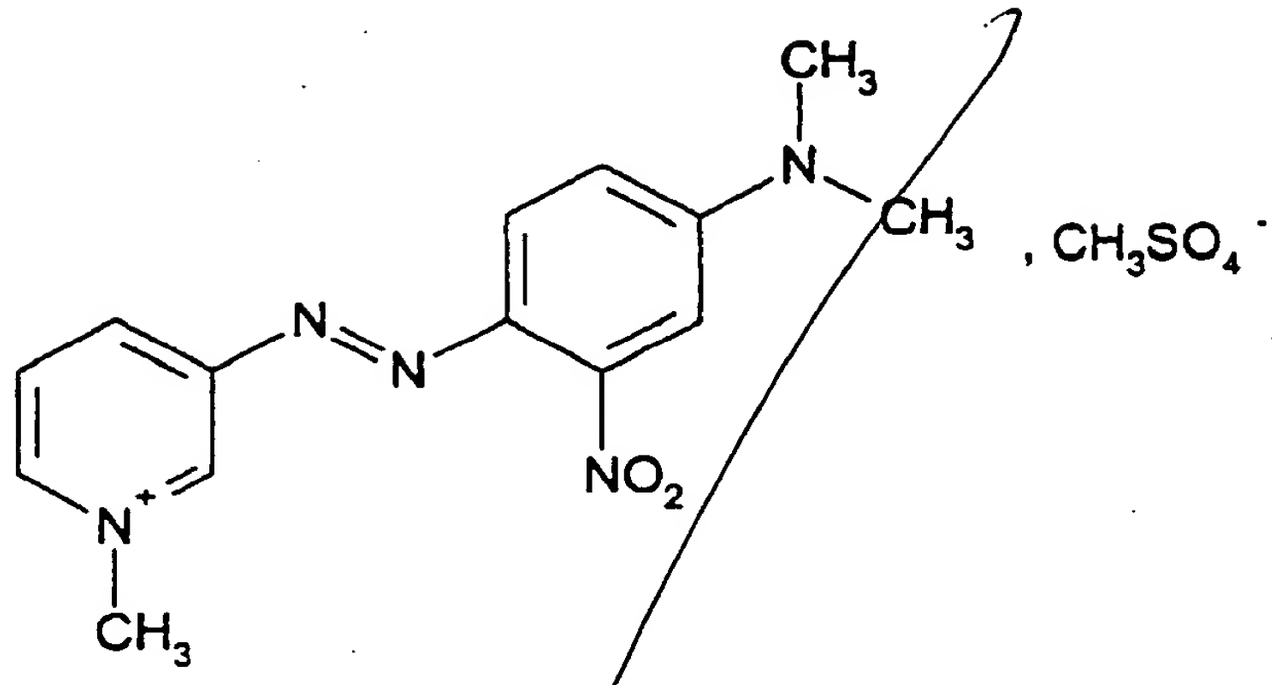
;

- 4'-amino-8'-hydroxynaphthalene-1'-azo-1-methyl-3-pyridinium methosulphate of formula:



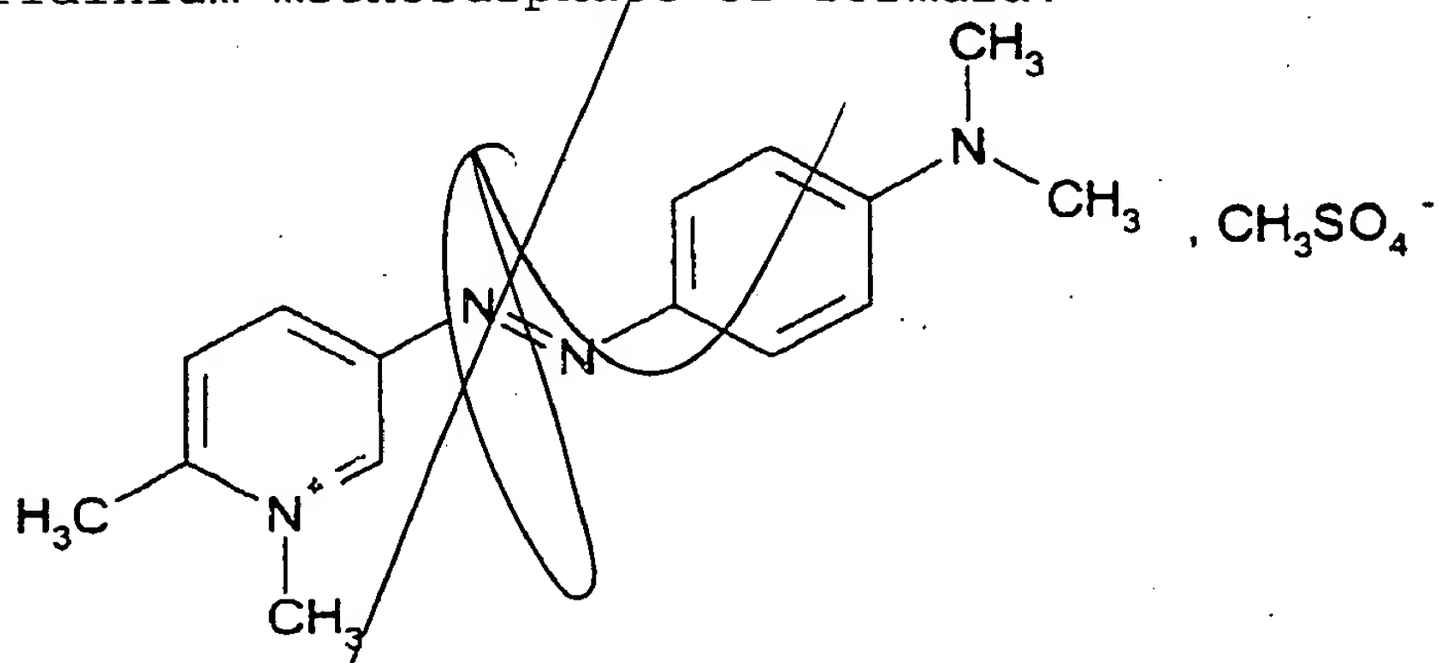
;

- 4'-dimethylamino-2'-nitrobenzene-1'-azo-1-methyl-3-pyridinium methosulphate of formula:



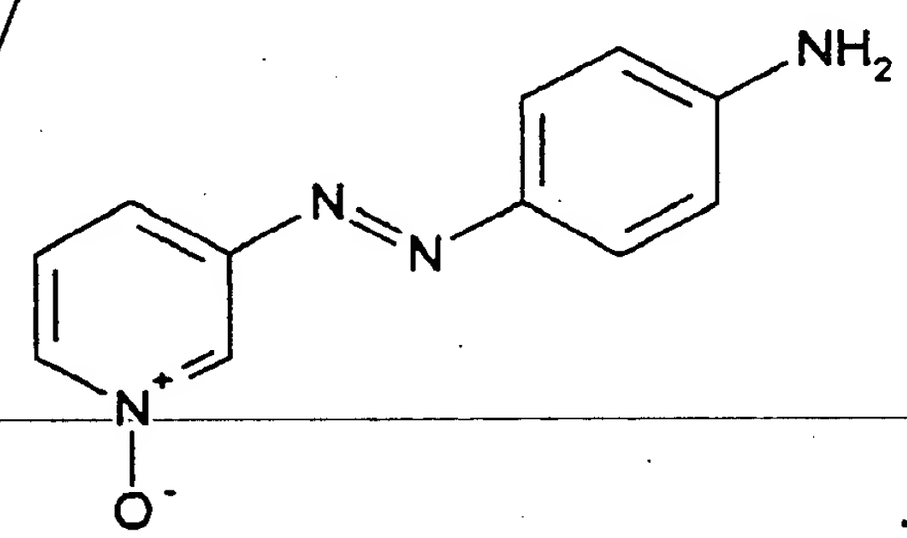
;

- 4'-dimethylaminobenzene-1'-azo-1,6-dimethyl-3-pyridinium methosulphate of formula:



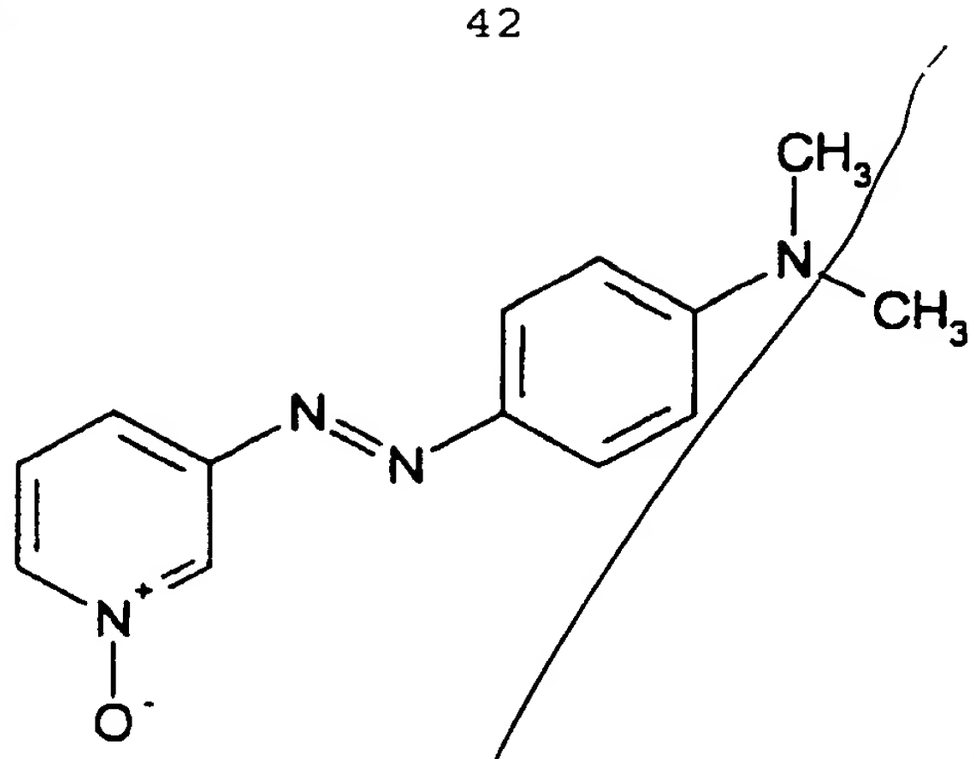
;

- 4'-aminobenzene-1'-azo-3-pyridine N-oxide of formula:



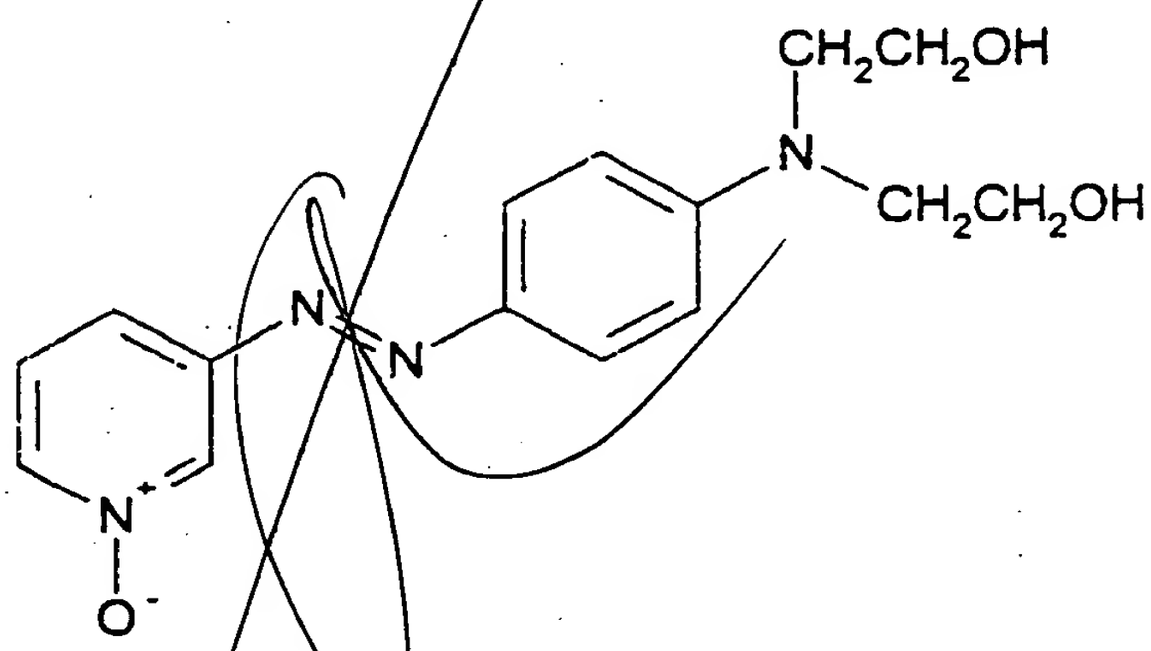
;

- 4'-dimethylaminobenzene-1'-azo-3-pyridine N-oxide of formula:



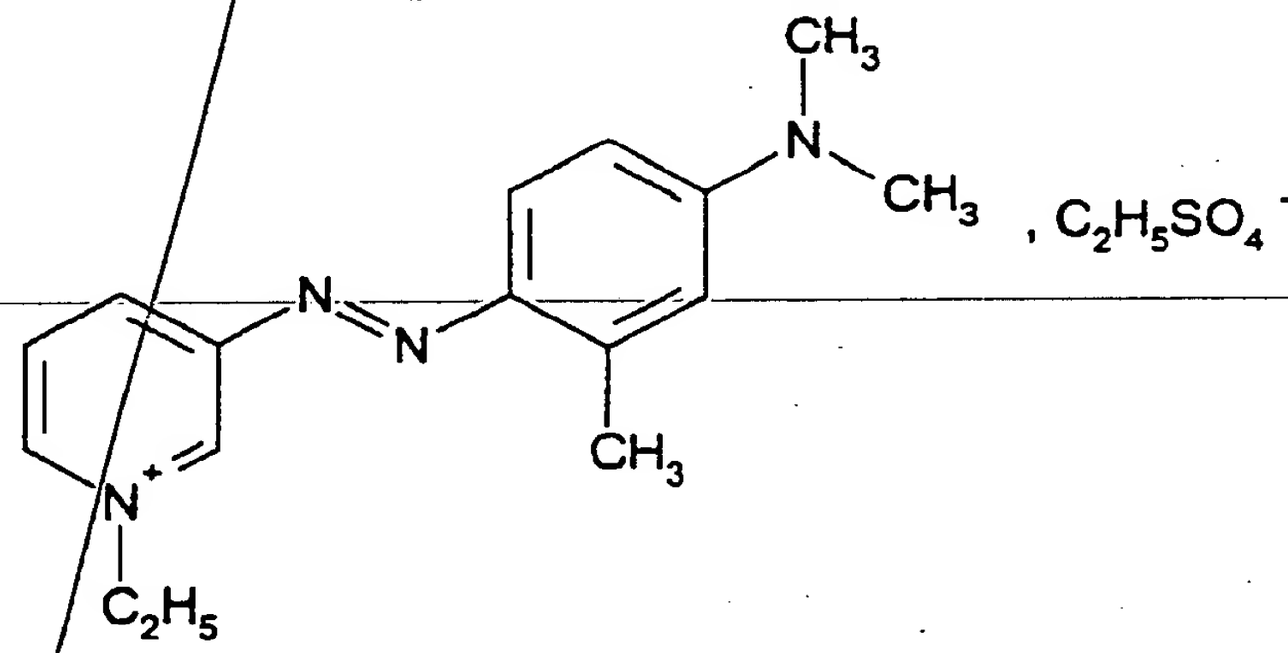
;

- 4'-N,N-bis(β-hydroxyethyl)aminobenzene-1'-azo-3-pyridine N-oxide of formula:



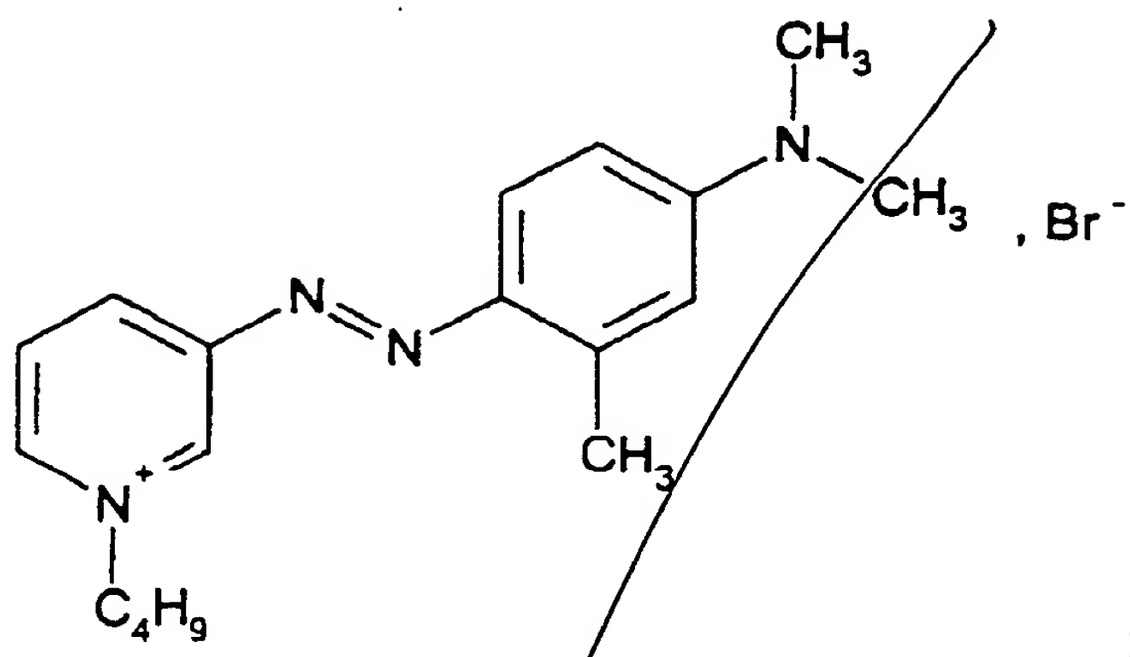
;

- 4'-dimethylamino-2'-methylbenzene-1'-azo-1-ethyl-3-pyridinium ethosulphate of formula:



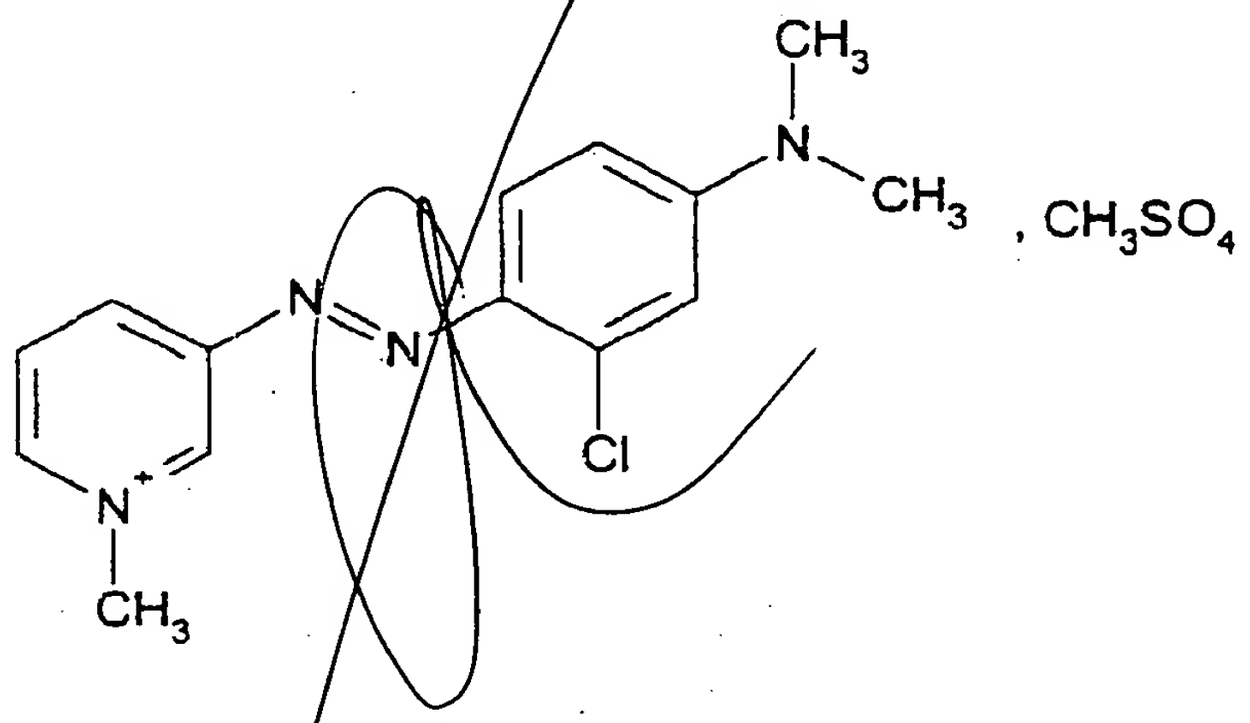
;

- 4'-dimethylamino-2'-methylbenzene-1'-azo-1-butyl-3-pyridinium bromide of formula:



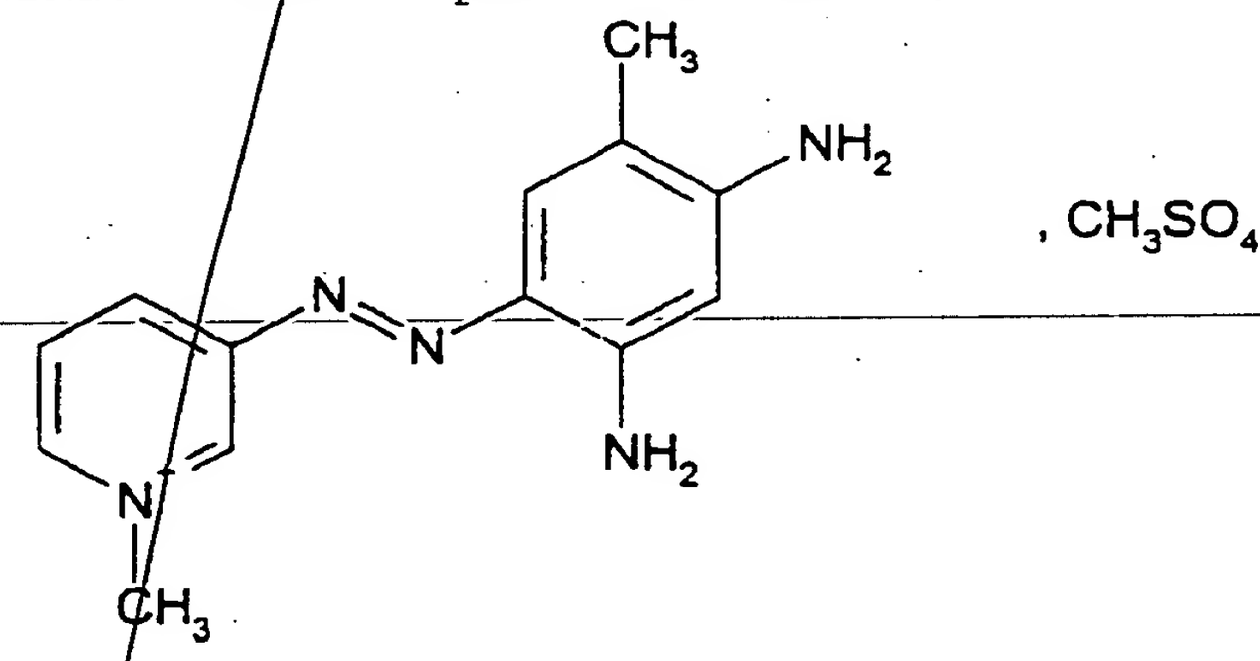
, Br^- ;

- 4'-dimethylamino-2'-chlorobenzene-1'-azo-1-methyl-3-pyridinium methosulphate of formula:



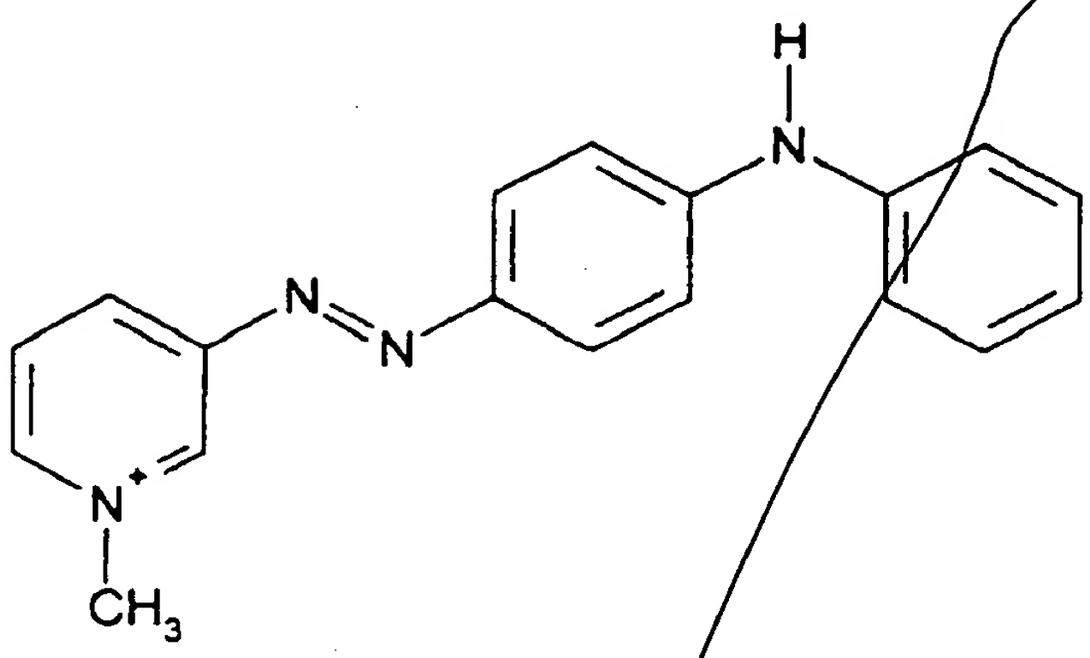
, $CH_3SO_4^-$;

- 2',4'-diamino-5'-methylbenzene-1'-azo-1-methyl-3-pyridinium methosulphate of formula:



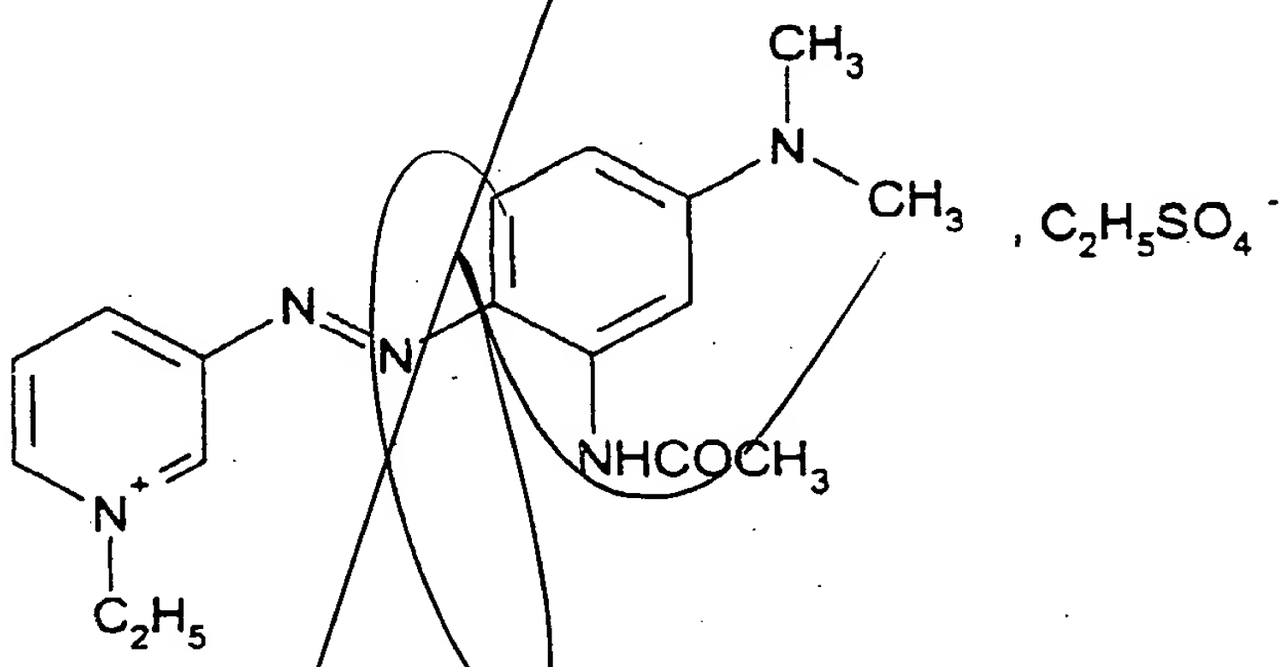
, $CH_3SO_4^-$;

- 4'-phenylaminobenzene-1'-azo-1-methyl-3-pyridinium methosulphate of formula:



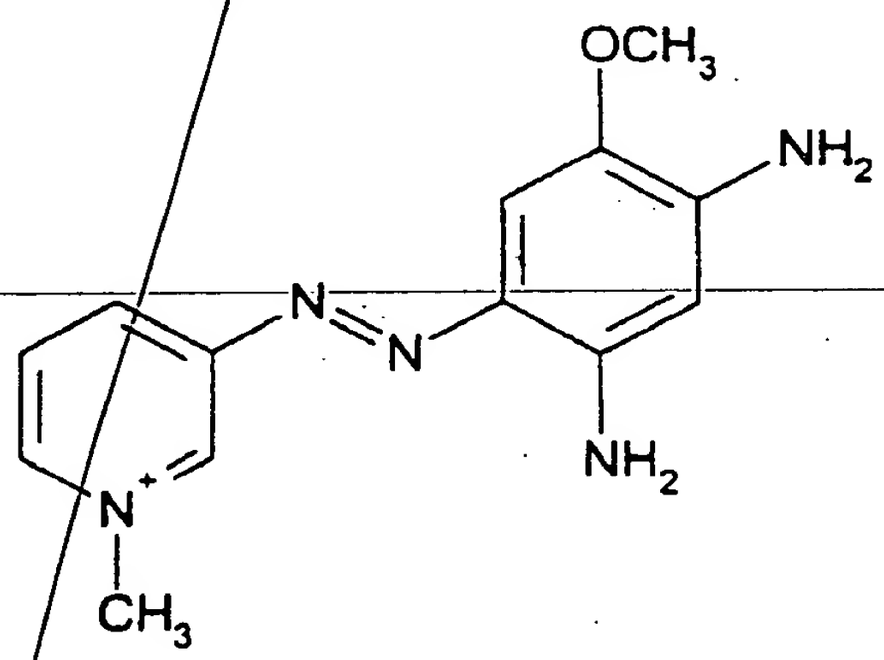
, $CH_3SO_4^-$;

- 2'-acetylamino-4'-dimethylaminobenzene-1'-azo-1-ethyl-3-pyridinium ethosulphate of formula:



, $C_2H_5SO_4^-$;

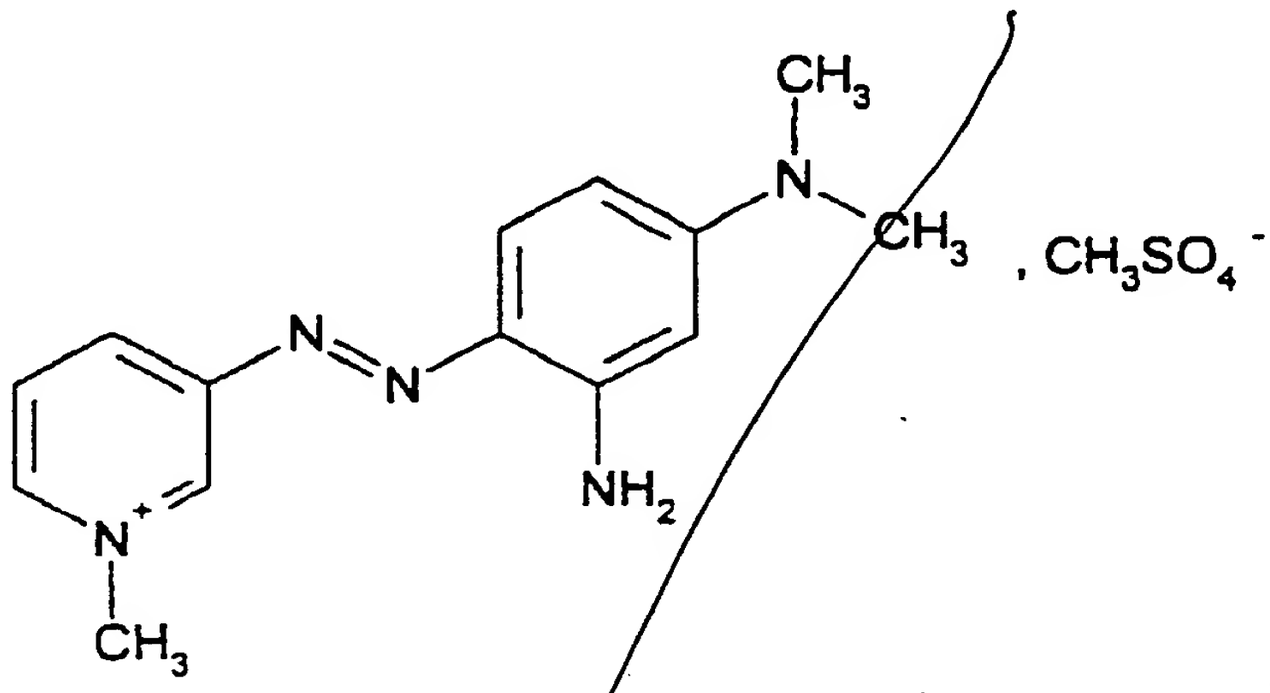
- 2',4'-diamino-5'-methoxybenzene-1'-azo-1-methyl-3-pyridinium methosulphate of formula:



, $CH_3SO_4^-$

and

- 2'-amino-4'-dimethylaminobenzene-1'-azo-1-methyl-3-pyridinium methosulphate of formula:



14. Composition according to any one of the preceding claims, characterized in that the 3-amino-pyridine derivative(s) of formula (I) represent(s) from 0.001 to 10% by weight relative to the total weight of the dye composition.

15. Composition according to Claim 14, characterized in that the 3-aminopyridine derivative(s) of formula (I) represent(s) from 0.01 to 5% by weight relative to the total weight of the dye composition.

16. Composition according to any one of the preceding claims, characterized in that the meta-aminophenol derivatives of formula (II) are chosen from 5-amino-2-methoxyphenol, 5-amino-2-(β-hydroxyethyloxy)phenol, 5-amino-2-methylphenol, 5-N-(β-hydroxyethyl)amino-2-methylphenol, 5-N-(β-hydroxyethyl)amino-4-methoxy-2-methylphenol, 5-amino-4-methoxy-2-methylphenol, 5-amino-4-chloro-2-methylphenol, 5-amino-2,4-dimethoxyphenol, 5-(γ-hydroxypropylamino)-2-methylphenol, 3-amino-2-chloro-6-methylphenol, 3-amino-6-chlorophenol and 3-(β-

aminoethyl)amino-6-chlorophenol, and the addition salts thereof with an acid.

17. Composition according to any one of the preceding claims, characterized in that the meta-aminophenol derivative(s) of formula (II) represent(s) from 0.0001 to 10% by weight relative to the total weight of the dye composition.

18. Composition according to Claim 17, characterized in that the meta-aminophenol derivative(s) of formula (II) represent(s) from 0.005 to 5% by weight relative to the total weight of the dye composition.

19. Composition according to any one of the preceding claims, characterized in that it contains one or more couplers other than the meta-aminophenol derivatives of formula (II) as defined in Claim 1 and/or one or more direct dyes other than the 3-aminopyridine derivatives of formula (I) as defined in Claim 1.

20. Composition according to any one of the preceding claims, characterized in that the addition salts with an acid are chosen from the hydrochlorides, hydrobromides, sulphates, tartrates, lactates and acetates.

21. Composition according to any one of the preceding claims, characterized in that the medium which is suitable for dyeing consists of water or of a mixture of water and at least one organic solvent.

22. Composition according to any one of the preceding claims, characterized in that it has a pH of between 3 and 12.

23. Process for dyeing keratin fibres, and in particular human keratin fibres such as the hair, characterized in that at least one dye composition as defined in any one of Claims 1 to 22 is applied to the said fibres, the colour being developed at acidic, neutral or alkaline pH with the aid of an oxidizing agent which is added to the dye composition only at the time of use, or which is present in an oxidizing composition that is applied simultaneously or sequentially.

24. Process according to Claim 23, characterized in that the oxidizing agent present in the oxidizing composition is chosen from hydrogen peroxide, urea peroxide, alkali metal bromates, persalts such as perborates, percarbonates and persulphates, peracids and enzymes.

25. Multi-compartment dyeing device or multi-compartment dyeing "kit", a first compartment of which contains a dye composition as defined in any one of Claims 1 to 22 and a second compartment of which contains an oxidizing composition.

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